ABSTRACT OF THE DISCLOSURE

PORTABLE COGENERATION FUEL-CELL POWER GENERATOR WITH HIGH-YIELD, LOW PRESSURE REFORMER FOR RECREATIONAL VEHICLES

A steam reformer for producing H_2 from a low pressure hydrocarbon gas (preferably propane) using an improved gaseous hydrocarbon fuel and steam delivery system comprising two coaxial tubes, an outer tube for delivery of steam which is gradually reduced in diameter to form a truncated conical tip for the outflow of steam around the end of an inner tube for the outflow of gaseous hydrocarbon . The outflow ends of both tubes are positioned in the same plane perpendicular to their axis. The outflow end of the second tube is preferably also gradually reduced in diameter in order to provide higher velocity of gaseous hydrocarbon to be mixed with the steam entering the reformer for optimized yield of hydrogen by optimizing the mixing of the steam and gaseous hydrocarbon in order to optimize the yield of hydrogen for the optimized generation of wattage for the same fuel-cell power generating system.